ERGONOMIC PRACTICE, WORKPLACE COMPLIANCE AND HEALTH IMPLICATIONS ON ADMINISTRATIVE STAFF IN ZAMFARA STATE

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Abstract

Ensuring the productivity and well-being of workers have become increasingly paramount in workplace. Therefore, the study addressed the critical issue of ergonomics, workplace compliance and associated negative impacts among administrative staff in Zamfara State. Administrative staff spend significant portions of their day in office settings and the significance of assessing if ergonomic practices are adhered to is of paramount importance to guarantee their wellbeing, comfort, and productivity in any workplace including those in Zamfara State. The population of the study comprised all the administrative staff in government institutions in Zamfara State and 80 respondents were randomly selected from two tertiary institutions which were purposively selected. Three research questions guided the study. A case study design was adopted and a set of structured questionnaire on a five point likert scale was used to collect data. The data collected was analyzed using mean and standard deviation. The findings revealed that equipment provided for workers do not meet up with ergonomic best practices and compliance and that this may have negative implication on their health. Based on the findings, it was concluded that ergonomic best practice, compliance and provision of standard equipment is necessary for a safe and healthy workforce. It was therefore, recommended that ergonomic guidelines should be followed by management of the institutions in order to ensure the safety and wellbeing of the workers for their maximum productivity.

Keywords: Ergonomics, practice, and workplace.

Background to the Study

Ergonomic is the scientific field focused on understanding the interactions between people and other components of a system. It encompasses the use of theories, concepts, data, and methodologies to design for the enhancement of human well-being and overall system efficacy. The ergonomic terms are derived from the Greek words "ergon," meaning "work," and "nomoi, “meaning "natural law." (Matt 2024). The International Ergonomics Association (2014), as referenced by Ronald, CN & Ofoke, SM (2018), defines ergonomics as the scientific discipline focused on understanding interactions between humans and other system components, as well as the profession that employs theories, principles, data, and methodologies to enhance human well-being and overall system performance. Ergonomics is used to achieve the dual objectives of health and productivity, as per this definition. It is pertinent in the design of safe furniture and user-friendly machine interfaces. Effective ergonomic design is essential to avoid repetitive strain injuries that may develop over time and result in chronic impairment. It is the study of human interactions with used objects and occupational environments. Health, safety, and performance are optimized when equipment, workstations, and work practices are

tailored to accommodate employee constraints and capabilities. Ergonomics enhances employee health and safety, mitigates expenses associated with absenteeism and productivity, and guarantees compliance with social and legal duties of companies towards their workers (Emmanuel, Jonathan & Ayodeji, 2014). Adherence to ergonomic practices and compliance in workplace not only better the life of office worker but it also helps in reducing physical stress on the workers system. Ergonomic is also needed for the maintenance of good health and improvement on the work output of an office worker. So adhering to ergonomic practices can help eliminate the development of repetitive strain injuries and muscle-skeletal injuries. Some few studies conducted about the practice and compliance of ergonomic are all geared towards maximizing the workers wellbeing and creating a space that best fit the worker and only with the best practice can such be achieved.

Considering the office's operations and atmosphere, ergonomics significantly influence the workplace regarding the health impacts of furniture, machinery, and equipment. Complying with appropriate ergonomic Design to mitigate or avert repetitive strain injuries and other musculoskeletal diseases is essential, since these injuries may develop over time and result in long-term impairment for the employee. Ergonomics practices and its compliance in the workplace are essential components of well-being, particularly administrative staff who dedicate considerable hours to desk-bound activities. Health constitutes wealth, and the primary factor influencing employee productivity and effectiveness in the workplace is a healthy lifestyle. A secure and healthy workforce is essential for achieving and exceeding organizational goals and objectives. The inadequate design of office facilities has been recognized as a predictor of the incidence of work-related musculoskeletal injuries and the safety of employees is crucial for minimizing medical expenses, reducing hospital visits, enhancing focus and dedication, maintaining well-being at work, preventing hazards, and promoting longevity, all of which contribute to increased productivity and performance. Office ergonomics, including layout, surroundings, and physical conditions, significantly influence employee health and safety. Physical characteristics of the workplace affect employee safety, fostering a favorable view of their job and significantly impacting their dedication to organizational goals and objectives. Olushola (2021). The research of Karl, Kroemer, and Anne, as referenced by Abdul, G., Seow Ta Wee, and Sulzakin M. (2017), asserts that office labor is a system exclusively executed by humans. Therefore, the primary goal of ergonomics is the comfort and well-being of those engaged in office work, regardless of its type. To ensure employee comfort, it is essential to optimize the workplace and its elements, including computers, desks, seats, floor dimensions, and other adjustable equipment, to accommodate workers' requirements and in doing same ergonomic practices and compliance must be adhered to prioritize the health and wellbeing of the individuals involved. This study will concentrate on assessing the level of ergonomic practice and compliance in Zamfara State and if it has any health impact on the administrative staff.

The wellbeing of workers is of a great concern to employers in which how to eliminate or reduce work-related accidents and injuries or illness that may occur in the workplace amongst employees should not be gloss-over. Administrative staff in Zamfara State appears to be facing challenges related

to ergonomics practices and compliance, which if not attended to may expose the employee to health issues due to poor ergonomic practices and may also have the potential of compromising the attribute to stick syndrome such as headache, back pain and eyestrain which some experts said is due to ventilation issue and wrong selection of right ergonomic office furniture. Administrative staff may also be exposed to other ergonomic workplace non-compliance issue and health problems which include musculoskeletal pain, repeated strain injuries linked to the use of computer and high level of stress and several other factors. There could be a lack of comprehensive ergonomic practices, understanding and implementation of ergonomic principles and safety protocols which this deficiency in ergonomic infrastructure and safety measures may expose the workers to health issues and inefficiency of work. This study therefore, investigated and assessed ergonomic practice, workplace compliance and associated impacts in Zamfara state to enhance the overall workplace environment and ensure the best practices for the well-being of the community.

Objective of the study

The main objective of the study are as follows:

- To assess if the workers workstations are ergonomically designed to fit them and if proper ergonomic practices are adhered to given the equipment provided for work.
- To determine the degree of compliance with ergonomic principles and if the lack of it has any health impacts on the staff.

The specific objective of the study is as follows:

- To assess the level of ergonomic practice, workplace compliance and associated health impact on the administrative staff in Zamfara State.

Research Questions

1. What is the extent to which the administrative Staff of Zamfara State institutions adhere to ergonomic practices based on the available equipment?
2. What is the level of ergonomic compliance by the administrative staff of Zamfara State institutions on ergonomic practices?
3. What are the health implications of non-compliance to proper ergonomic practices among administrative staff of Zamfara State institutions?

Literature Review

Ergonomics describes how jobs, workspaces, and equipment are designed to accommodate the constraints and capabilities of individuals, aiming to enhance the efficiency and safety of employees. Noncompliance to ergonomic practice may lead to health problems among employees, including musculoskeletal disorders, eye strain, and repetitive injuries. Ergonomics, a component of workplace safety and health, focuses on the arrangement and organization of office equipment, amenities, work regulations, and other activities to provide maximum comfort for employees. The primary aim of

ergonomics is to safeguard employees against injuries caused by repetitive motions and the strain associated with typing, prolonged computer screen exposure, extended sitting, and improper work posture. The research of Karl, Kroemer, and Anne, as referenced by Abdul, Seow, and Sulzakin (2017), asserts that office labor is a system exclusively executed by humans. Therefore, the primary goal of ergonomics is the comfort and satisfaction of those engaged in office work, regardless of its kind to ensure employee comfort, it is essential to optimize the workplace and its elements, including computers, desks, seats, floor dimensions, and other adjustable equipment, to accommodate workers' requirements.

O'Neill, as articulated by Edna, Danjuma, and James (2021), said that ergonomics might be analogously examined about the office, including aspects such as spatial organization, seating arrangements, and the positioning of equipment, windows, and doors. This necessitates an assessment to ensure that equipment and furnishings correspond to and accommodate the users about the nature of their activity. These include seating configurations, desk positioning, printer use, computer networking, and any other resources pertinent to their task. The office environment must be evaluated to assess temperature, ventilation, lighting, and décor. All These facets of a workplace are considered by the people inside, emphasizing their safety, health, comfort, and productivity. Ergonomics are essential in the workplace, since most professions need a 40-hour workweek, constituting a significant portion of office workers' lives, including administrative personnel. Non-compliance with ergonomics practices may result in prolonged overstretching of the body, leading to pain or injury, with possible lifelong health consequences. Suboptimal posture may result in health impacts such as carpal tunnel syndrome, perhaps causing lasting harm to the arm or wrist. Ergonomic practices are essential since they provide tools to alleviate strain and promote healthy posture, while also playing a crucial role in industries by minimizing injury risks and their effects on job satisfaction and productivity among workers, such as administrative staff. Effective ergonomic workplace compliance are essential to prevent pain and reduce the risk of Repetitive Strain Injuries (RSI), including Carpal Tunnel Syndrome and other musculoskeletal illnesses that may deteriorate over time and lead to permanent disability. This indicates that equipment and workstations should be arranged to optimally fulfill requirements. The organizational structure, culture, desk heights, monitor and keyboard placement, seating arrangement, lighting, design, and spatial configuration of the workstation may all affect employee commitment and productivity factors in organizational ergonomics enhance employee productivity, increase overall organizational performance, and increase profitability (Akinbola & Popoola, 2019).

Ergonomic workstations could help lower straining of the eyes, frequent headaches, and other common workplace discomforts, improving employees' job satisfaction, performance, and productivity. Problems caused by workplace ergonomics compliance may include issues like musculoskeletal disorders (MSDs), injuries that affect the body's muscles, tendons, and nerves which are often caused by overdoing it, wrong postures, and repetitive motions in the office and may

result in pain, discomfort and long-term disability which can be expensive for the employer and employee.

The prevalent use of computers in the workplaces of emerging countries has not conformed to ergonomic practices in the design of computer workstations, despite the obvious advantages and disadvantages injuries and pain are more likely to occur because many workplaces initially built for paper-based tasks now feature computer workstations without appropriate modifications. As computer technology advances and software and computer packages improve, challenges about workplace health and safety correspondingly increase. This may diminish performance and satisfaction. Additionally, prolonged Computer use may lead to ocular and visual complications, attributable to inadequate viewing distance, suboptimal lighting, and screen glare. The Provision and installation of various models of ergonomic office equipment, including adjustable chairs, ergonomic computers, and ergonomic workstations, must be accompanied by a robust ergonomic awareness campaign, as inadequate design of office facilities has been recognized as a predictive factor in the incidence of office-related injuries. Chadwani, Chauhan, and Bhatnagar (2019) showed that a high incidence of shoulder, back, and neck issues is associated with prolonged hours at computer workstations in uncomfortable postures, as well as inadequate workplace design. Employees may lack awareness of appropriate ergonomic measures and the significance of workplace safety.

Employee performance can be enhanced through the strategic planning of workspaces with ergonomic practices, alongside a deeper understanding of how ergonomic practice and compliance improved work environment contributes to performance enhancement and ensures safety for future tasks. Research by Momodu Edosomwan and Edosomwan (2014) on the assessment of ergonomic deficiencies identified significant shortcomings in computer workstations, inadequate furniture, lighting, and temperature. The study indicated that 72%, 66%, 47%, and 35% exhibited relative errors in chair height, chair back/arm support, temperature, desk height, and lighting, respectively. The research indicated that these relative mistakes contribute significantly to the majority of work-related musculoskeletal disorders, including eyestrain, shoulder discomfort, arm pain, and back pain.

Methodology

The research utilized case study design to study administrative staff of two institutions in Zamfara state namely: National Open University of Nigeria, Gusau Study Centre and College of Education, Maru, Zamfara State. Data was collected from 80 administrative staff of the two-institution using a closed-ended questionnaire that consisted of questions on ergonomic practices, compliance, and health impact were distributed to them. The data collected was entered and analyzed using a five point Likert Rating Scale with responses scored based on their mean value. A mean score of 3.05 or higher indicated acceptance while scores below 3.05 were rejected.

Presentation of Results

Table 1 addressed research question 1.

Table 1 Mean on the extent to the adherence to ergonomic practices given the equipment provided

S/N	Variable	SA (1)	A (2)	N (3)	D (4)	SD (5)	Σx	_ x	Remark
1.	Chairs and desks provided comfortable	2	12	-	24	42	242	3.0	Accepted
2.	Furniture provide comfort considering backrest, height and good posture	3	10	2	41	24	313	3.9	Accepted
3.	Equipment provided appropriate for maintaining good posture	6	9	-	20	45	329	4.1	Accepted
4.	Monitor provided for typing covered with screen protector to reduce eyestrain	10	6	5	48	11	284	3.55	Accepted
5.	Equipment provided for work meet up with the standard for ergonomic practice	6	8	-	52	14	300	3.75	Accepted

Source: Questionnaire administered 2024

Based on the analysis, administrative staff strongly disagree that the chairs and desk provided for work are comfortable (item 1). They also disagree with furniture providing comfort considering backrest, height and good posture with a mean score of 3.9. Additionally, the administrative staff also disagreed that the monitor provided for typing not covered with screen protector to reduce eye strain and also that the equipment provided for work do not meet the standard for ergonomic practice with a mean of 3.55 and 3.75 respectively.

Table 2 addressed research question 2.

Table 2: Mean on the level of ergonomic compliance on ergonomic practices

S/N	Variable	SA (1)	A (2)	N (3)	D (4)	SD (5)	Σx	_ x	Remark
1.	Workplace organized and ergonomic fit considering the right ergonomic practice	15	10	-	23	32	287	3.58	Accepted
2.	Your organization's level of ergonomic compliance meet the standard of best practices in ergonomic	3	12	1	22	42	328	4.1	Accepted
3.	Provision of health and safety guideline regarding ergonomic	3	6	-	43	28	327	4.0	Accepted

practice

Source: Questionnaire administered 2024

Table 2 (item 1) shows that the respondents strongly disagreed, with a mean of 3.58 that workplace is not organized and ergonomic fit considering the right ergonomic practice. They also disagreed, with a mean score of 4.1 (item 2) that their organizations level of ergonomic compliance meet the standard of best practices in ergonomic. Furthermore, respondents disagreed on provision of health and safety guideline for them with a mean score of 4.0 (item 3).

Table 3 addressed research question 3.

Table 3: Mean on ergonomic practice and workplace compliance having any health impacts on the administrative staff in Zamfara State

S/N	Variable	SA (1)	A (2)	N (3)	D (4)	SD (5)	Σx	_ X	Remark
1.	Exposure to health risk given any felt noncompliance with ergonomic practice	38	22	-	9	11	173	2.1	Rejected
2.	Equipment provided for work can impact on your health	50	20	1	4	3	124	1.55	Rejected
3.	Areas where pains are felt after work day are caused by the equipment provided for work	18	12	-	40	10	316	3.15	Accepted
4.	Pains can have impacts on your health	34	35	1	6	4	151	1.88	Rejected

Source: Questionnaire administered 2024

From table 3, (item1) respondents strongly agreed with a mean of 2.1 that they are exposed to health risk given the noncompliance with ergonomic practice in their organization. Respondents also strongly agreed that equipment provided for work can impact on their health with a mean score of 1.55 and that areas where pains are felt after work day are caused by the equipment provided for work in (item 3). Furthermore, respondents strongly agreed that the pains felt can impact on their health with a mean score of 1.88.

Discussion of Findings

The first research objective aimed to assess if the workers workstations are ergonomically designed to fit them and if proper ergonomic practices are adhered to given the equipment provided for work and the result of the findings revealed that respondents disagreed with a mean score of 3.0 that chairs and desk provided are comfortable. Similarly, respondents also disagreed that the furniture and

equipment do not provide comfort considering backrest, height and good posture with a mean of 4.1and 3.55 respectively and that equipment provided for work do not meet up with standard of ergonomic practice.

The second research objective which is to determine the degree of compliance with ergonomic principles and if the lack of it has any health impact. The results revealed that respondents disagreed with their workplace being organized and fit with a mean score of and that their organizations level of organization compliance meet the standard best practices in ergonomic with a mean score of 3.58 and 4.1 respectively. The respondents also strongly agree that they are exposed to health risks due to noncompliance with ergonomic practices and that they feel pain after work day and that the pains felt could impact on their health. This observation is consistent with the report of the study of Chandwani, Chauhan and Bhatnagar (2019) which indicated that 80% of their respondents suffered from lower back pain, neck pain and shoulder pain and that their respondents did not get any type of training on ergonomics. Also the work of Wee, Mohammed and Gambo (2017) in Katsina, Nigeria which indicated that workers involved with computer and typing jobs are exposed to work place ergonomic risk due to poor office facilities such as back pain, neck disorder, shoulder pain and eye syndrome which are all classified as musculoskeletal disorder. In this study, the major problems identified are that proper equipment for a fully ergonomic office are not provided for work which leads to noncompliance with ergonomic best practice and does not support an organized workstation leading to discomfort in posture and carrying out tasks given that administrative staff are not familiar with ergonomic practices, they make do with what they have leaving them with different degree of pain which when accumulated over a period of time may have impact on their health which makes them not safe for future works or affect their health and productivity.

Conclusion and Recommendation

A safer and healthier workforce is made possible with compliance and best practices in the workplace. Ergonomics is a technique that may be used to improve employee performance by giving appropriate workspace and equipment to ensure the health and safety of the workforce. After all, only a safe and healthy workforce can produce results. In conclusion, ergonomic best practices, compliance and provision of proper equipment that meet ergonomic standard is a necessity for a safe and healthy workforce and which if not provided may expose workers to different degree of pain which when accumulated over a period of time may lead to work related injuries which makes the workers not safe for future works or affect their health and productivity. The standard ergonomic guidelines should be followed by the management of the institutions for the safety and wellbeing of the workers.

Gap Filled

The study filled the gap being it is the only study conducted on Assessment of ergonomic practice, workplace compliance and associated health impact among administrative staff in Zamfara State.

Identified Gap for Further Studies

Study can be carried out to examine the adherence to ergonomic standard in other government establishment and private sector.

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